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SCAPHELLA CONTOYENSIS,
A NEW VOLUTID (GASTROPODA) FROM EAST MEXICO

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ABSTRACT

Scaphella contoyensis, a new species from the Yucatan Channel, Mexico, is described and compared with related volutid species of the New World subfamily *Scaphellinae*.

During the past decade, several examples of a large, thin-shelled volute have been obtained by shrimpers in depths ranging from about 70 to 180

meters in the Yucatan Channel, mostly in the vicinity of Contoy Light, off Cabo Catoche, Yucatan, Mexico. These specimens are somewhat

reminiscent of Australian species of *Ericusa* and *Cymbiolista* in size and coloration, but they lack the spinose ornamentation that characterizes the latter Indo-Pacific forms.

Specimens of the new species were generously donated to us by Donna and Riley Black and Elsie Malone of Ft. Myers, Florida, and Dr. William J. Clench of Dorchester, Massachusetts. Gene Everson of Ft. Lauderdale, Florida, kindly lent a specimen from his collection and donated the soft parts. These specimens form the basis for the present report. Additional specimens, all taken by dredging in the Yucatan Channel, are preserved in the following private collections: Christine S. Goddard of Ft. Myers Beach, Florida, 1 specimen, in 46 meters, March 1968. Barbara and Thomas McGinn of Cutoff, Louisiana, 8 specimens (2 of which are now in the collection of the American Museum of Natural History), in 132 to 183 meters, February 1970, (1 specimen), March, 1972 (6 specimens), 1975 (1 specimen); Elsie Malone of Ft. Myers, Florida, 1 specimen in 90 meters, *ex* Carmel and Wassy Frank collection; Carmel and Wassy Frank, Ft. Myers, Florida, 2 specimens (*teste* Elsie Malone); and Ernie Ryckman, of Key West, Florida, 1 specimen. We are grateful to these collectors for providing data and photographs of their specimens.

Drs. Frederick M. Bayer and Joseph Rosewater of the National Museum of Natural History also contributed data, and the latter lent us the holotypic specimen of *Scaphella evelina* Bayer. Our colleague, G. Robert Adlington, photographed the specimens illustrated in this paper.

TAXONOMIC PLACEMENT

Bayer (1971, pp. 200-221) succinctly reviewed the pertinent literature pertaining to the classification of the western Atlantic species of Volutidae (*q.v.*, Clench, 1946, 1953; Clench and Turner, 1964, 1970; Olsson, 1965; Pilsbry and Olsson, 1953, 1954, and Weaver and duPont, 1970). We concur with Bayer's conclusion that the classification of the family is ". . . still a difficult matter," as the genus-group assignment of the *Scaphella* described herein proved to be perplexing because of conflicting data. We must, however, comment on Bayer's (1971, p. 195) placement of the genus

Teramachia Kuroda, 1931, in the family Turbinellidae, based largely on shell characters in the absence to him of information on the radula. Anthony D'Attilio (*in litt.*) has pointed out to us that the radular characters of *T. tibiaeformis* Kuroda, 1931, the type species of *Teramachia*, as illustrated by Habe (1952, p. 132, fig. 12), are typically volutid. This genus is, therefore, referable to the subfamily Calliotectinae Pilsbry and Olsson, 1954, on the basis of radular and opercular morphology (*v. et.*, Weaver and duPont, 1970, p. 177, fig. 41b, for an illustration of the operculum).

In the most recent reviews of the subfamily Scaphellinae, Bayer (1971, pp. 209-216) and Weaver and duPont (1970, pp. 140-145) recognized the genus *Scaphella* as a polytypic taxon to include, in addition to the nominate subgenus, the subgenera: *Clenchina* Pilsbry and Olsson, 1953 (type species by original designation: *Voluta dohrni* Sowerby, 1903, = *S. gouldiana* (Dall, 1887), *fide* Abbott, 1974, p. 244) and *Aurinia* H. and A. Adams, 1853 (type species by original designation: *Volutia dubia* Broderip, 1827). The subgeneric units were separated by these authors largely on the basis of minor differences in the radular morphology, as defined by Pilsbry and Olsson (1954) in their "Systems of the Volutidae". According to Bayer (1971, p. 209, and fig. 63), the type species of *Scaphella (sensu stricto)*, *Voluta junonia* Lamarck, 1804, has ". . . a single long, concave cusp and no small basal denticles."; *S. (Clenchina) dohrni* has ". . . a shorter, more pointed, concave cusp flanked by minute accessory cusps."; and *S. (Aurinia) dubia*, together with the genus *Volutifusus* Conrad, 1863, has ". . . a well-developed lateral cusp on each side of the main, central cusp." Bayer concluded that the simple Y-shaped teeth of *S. junonia* had resulted from progressive reduction of the side-denticles from the well-developed tricuspid teeth of *Aurinia* and he suggested that these distinctions would be found to be of minor taxonomic significance, when more radular data became known. The radular morphology of the new species of *Scaphella* described herein serves to support Bayer's thesis, because the teeth lack basal denticles (fig. 7), in contrast to the denticled teeth of *S. evelina* Bayer (1971, fig. 63), which were

believe to be the closest known relative of *S. contoyensis*, n. sp. (see remarks below).

In addition to the supposed radular differences, *Scaphella* (*sensu stricto*) and *Scaphella* (*Clenchina*) have been distinguished by trivial conchological characters, including the possession by the latter of less-solid shells than those of *S. junonia* (Weaver and duPont, 1970, p. 140). The basic similarity of the shell morphology, together with the minor differences of the radular characters, however, suggests to us that the genus-group taxon *Clenchina* is of questionable taxonomic value and our new species, together with *S. evelina*, should be assigned to *Scaphella* (*sensu stricto*).

FAMILY Volutidae

SUBFAMILY Scaphellinae

Genus *Scaphella* Swainson, 1832

Type species: *Voluta junonia* Lamarck, 1804, by subsequent designation, Herrmannsen, 1848, p. 423.

Scaphella contoyensis, n. sp.

Figures 1-7

Description: Shell fusiform, large (attaining 170+ mm in length), with 6 whorls. Protoconch large and smooth, consisting of about 2 whorls. The first three post-nuclear whorls are thicker and more solid than the fragile body whorl, which is thin and inflated in mature individuals. The first 2 post-nuclear whorls sculptured with fine intersecting spiral and axial cords that give a weakly cancellate appearance to the surface (figure 5). Surface sculpture of the third post-nuclear whorl, especially posteriorly near the suture, is microscopically cancellate, but the sculpture is scarcely perceptible and the surface becomes macroscopically smooth on the body whorl. Spire short, not acutely angled; suture well-defined, moderately impressed. Aperture elongate-elliptical; outer lip thin and the parietal wall thinly glazed. Anal sulcus narrow and constricted posteriorly; siphonal canal broadly extended. Columella slightly arched, with two plications extending within the aperture. Periostracum tannish yellow and exceedingly thin.

Color of nuclear whorls is uniformly tannish brown; ground color of second and third post-nuclear whorls buff, overlaid with two spiral

rows of irregular, elongated, chestnut-brown spots; ground color of third post-nuclear whorl and body whorl is a darker buff, with interspersed spiral bands of chestnut-brown streaks, which are lighter than the earlier chestnut-brown spots. In mature specimens, the interior edge of the outer lip (figure 3) has a continuous band of dark brown and the aperture is glossy, tannish-yellow to apricot.

Softparts: Length of foot, after preservation in alcohol, 78 mm; color-base whitish, with irregular dark markings that are preserved as black blotches (figure 6). *Radula:* Reduced to simple Y-shaped rachidian teeth lacking basal denticles (figure 7). An operculum is lacking.

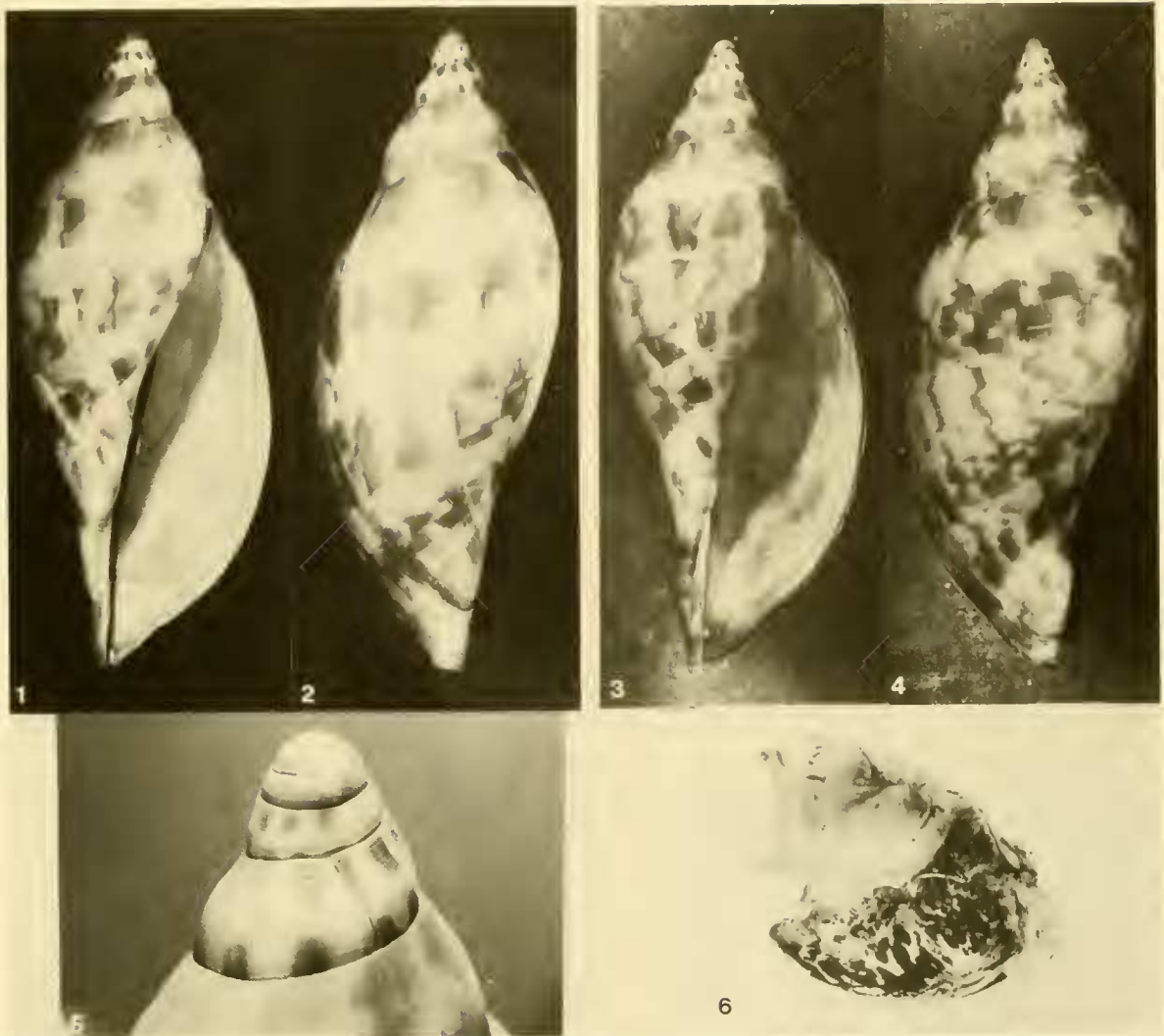
Measurements: Holotype 173 mm in length, 67.3 mm in width; figured male paratype, length, 70 mm in width (Everson collection); smallest specimen, immature, with three post-nuclear whorls, 56.5 mm in length (McGinn collection). Slender female specimen, 166 mm in length, 58.5 mm in width (AMNH collection, ex McGinn and Clench).

Type locality: Northwest of Contoy Light, Yucatan Channel, Mexico, dredged in 159 meters, September 1973, by Donna and Riley Black.

Type specimens: Holotype, AMNH 187180 (figures 1, 2, 5); paratype (figures 3, 4), northwest of Contoy Light, off Yucatan, Mexico, dredged in 73 meters, March 1978, Gene Everson collection. Paratype AMNH 182250, trawled off Punta Francisca, Yucatan, Mexico, in 183 meters, March 1972, ex McGinn collection.

Known range: Yucatan Channel, off Cabo Catoche, in 73 to 160 meters, and off Punta Francisca, in 183 meters, Yucatan, Mexico.

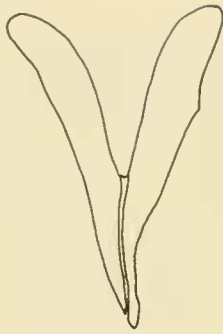
Remarks: *Scaphella contoyensis* n. sp. appears to be most closely related to *Scaphella evelina* Bayer (1971, p. 213-216, figs. 63c, 64), a species described from off eastern Panama and Colombia, in depths of 137 to 641 meters. Bayer's taxon differs from the present species by the possession of an acute spire, in the development of much stronger cancellate sculpture and a less flaring outer lip, and by the presence of a less distinctive and apparently inconsistent color pattern, as well as by the radular characters discussed above.



FIGS. 1-6 *Scaphella contoyensis* n. sp. 1, 2 holotype, AMNH 187180, $X^{1/2}$; 1, Apertural view, note immature outer lip; 2, Dorsal view. 3, 4, Paratype, Erverson collection, $X^{1/2}$; 3, Apertural view, note mature outer lip with dark colored band on interior edge of the outer lip; 4, Dorsal view. 5, Enlargement of the apical region of the holotype, showing weak cancellate sculpture, X_2 . 6, Body of the paratype specimen illustrated in figs. 2, 3, $X^{1/2}$; soft parts contracted by preservation in alcohol and sans the liver.

The development of cancellate sculpture in this subfamily varies considerably among the species-group taxa and within some populations of these taxa. Of the extinct species that are most closely related to *S. junonia*, the early post-nuclear whorls are weakly to moderately cancellate in *S. trenholmii* (Tuomey and Holmes, 1856) from the Miocene and *S. floridana* (Heilprin, 1887) from the Pliocene. In the Miocene species, *S. precursor* Gardner, 1948, however, post-nuclear whorls are strongly sculptured and a spiral row of regularly

spaced nodules are found immediately below the sutures on the earlier whorls and the body whorl; the postsutural nodules become obsolete and replaced by wavy spiral cords and prominent axial ribs on the remainder of the body whorl in mature specimens. In the living species, weak to moderate cancellate sculpture occurs on the second and third post-nuclear whorls of some individuals of *S. junonia* and *S. gouldiana* (especially in the forms named, *S. robusta* (Dall, 1889) and *S. marionae* (Pilsbry and Olsson, 1953), some ex-



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FIG. 7. The outline of a rachiidian tooth of *Scaphella contoynensis* n. sp.; greatly enlarged.

amples of which possess nodular spiral bands on the earlier whorls.). All of the specimens of *S. contoynensis* n. sp. and *S. evelina* that we have examined have cancellate sculpture on the early whorls and near the suture on the body whorl. In the case of the former species, this sculpture is essentially microscopic, whereas in the latter species it is easily seen by the naked eye.

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